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ABSTRACT

Technology education is now an integral part of the curriculum in middle school and high school programs of the Logan (Utah) City Schools. The five major vertical curriculum cores required of all ninth-grade students are human resource management, free enterprise applications, career insights and opportunities, technology trends, and counseling and guidance. The 12 occupational clusters that support the vertical cores are as follows: marketing, food service, communication, health, manufacturing, office business, textiles and clothing, construction, space design, agriculture, transportation, and service. Task activities are the vehicles for student involvement in moving through the five vertical cores of learning, which include 13 broad competency standards and 67 specific objectives. All students involved in the ninth-grade program must complete the course of study in one or two trimesters with 25 students per class. Classes are 70 minutes each in length. The program has been operating successfully for 4 years and has expanded to include three levels of technology for continued study in grades 10, 11, and 12. (A 7-item bibliography is included.) (CML)

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TECHNOLOGY EDUCATION - A BROADER APPROACH

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Logan, Utah

November 30, 1989

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Kathy Zilles - Business/Secretarial Science
Shawna Jardine - Parenting/Business
Larry Williams - Entrepreneurship/Accounting
Patti Johnson - Interior Design/Child Development
Jennifer Hyde - Foods/Technology Education
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Rulon Olsen - Principal, Logan High School

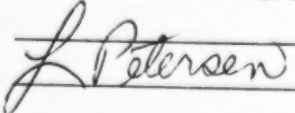
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LOGAN CITY SCHOOLS
TECHNOLOGY EDUCATION - A BROADER APPROACH

INTRODUCTION

The application of technology is evident in every part of our daily lives with increasing numbers of new developments occurring that overshadow yesterday's latest accomplishments. Technology education is now an integral part of today's curriculum in middle school and high school programs of the Logan City Schools. Students enrolled in technology programs have the opportunity to understand the trends that technology will have on their need for improved educational preparation and their future way of life. Technology activities are centered on the changing skills and attitudes found in the workplace that will affect a student's need to adjust to the changes in employment, as well as their attitudes toward work and education. The social impacts of technology are being felt in every home and by every person as new devices and products are made available. Quality upgrading and increased scientific manufacturing driven by technology is expected in order to compete in tomorrow's expanding international economy. Cost-effective production and manufacturing methods are increasingly important in global competition for betterment of life. The technology education movement is not a fad, but a real part of the needed changes that must occur in our schools enabling our future generation to address problems that transcend our boundaries or suffer the consequences of becoming a servicing society for others who are better prepared in the creativity/manufacturing and distribution information processes.

NEED

Problems now surfacing in our schools include "curriculum change" which seems to be the order of the day in the reform movements requiring more credits from students in expectation of their enrollment in university programs. Needed in America are more engineers, with only 7 in 1000 American college students choosing engineering, while in Japan the figure is 40 per 1000. Yet, in another vein, 80% of all the jobs do not require university degrees, and with costs soaring for the baccalaureate degree, students are looking closer at work opportunities which require upgraded skills with the new technologies found in emerging occupations.

One of three students entering high school is dropping out due to lack of relevancy of curriculum, boredom with subject matter, high academic requirements, and lack of targeting job opportunities. Technology-related programs are surfacing in the schools under the new umbrellas of communication, transportation, construction and manufacturing, but upon analysis we find these classifications too narrow and self limiting nationally as well as personally. The rush to address technology demands has caused many educators to raise questions with how to modify the vocational curriculum to better meet the needs of students and the challenges created by other countries worldwide.

LOGAN TECHNOLOGY EDUCATION MODEL

The staff of the Logan schools selected five major vertical curriculum cores in designing a technology course of study to be required of all 9th grade students. The vertical curriculum cores include:

1. Human Resource Management
2. Free Enterprise Applications
3. Career Insights and Opportunities
4. Technology Trends
5. Counseling/Guidance

Supporting the five major vertical cores of technology study are twelve occupational clusters which include:

- | | |
|--------------------|----------------------|
| 1. Marketing | 7. Textiles/Clothing |
| 2. Food Service | 8. Construction |
| 3. Communication | 9. Space Design |
| 4. Health | 10. Agriculture |
| 5. Manufacturing | 11. Transportation |
| 6. Office Business | 12. Service |

More significant are the job activities provided in the twelve clusters that are taken from local and state Job Service surveys of "Occupations in Demand." The task activities are the vehicles for student involvement in moving the students through the five major vertical curriculum cores of learning, which include 13 broad competency standards and 67 specific objectives, all designed for exposure to a broad base of new technology experiences and applications.

ALL students involved in the 9th grade program will complete the course of study in one or two trimesters with N=25 students per class (70 minutes each in length).

The advantages are:

1. Technology related areas of employment are identified, enabling both industry and students to view immediate as well as future job opportunities and employee expectations.

2. Curriculum offerings are condensed to include new mini-courses in agriculture (hydroponics), food service (deli-sandwich), communication (satellite applications), construction (CAD) etc., all taught and linked to a student's high school educational planning schedule.

3. Representatives of industries reflecting on "Occupations in Demand" can visit the program and explain new job opportunities, educational preparation needs, employee-employer expectations all designed to "catch up" or "keep up" with other productive countries.

4. Career guidance activities are planned for all students in goal-setting sessions with assistance from the school counselor in both individual, as well as group settings.

5. Human resources are directed towards a more meaningful teaming experience for students academically and occupationally with applied technology activities.

6. Technology education can orient students to a new meaning for "learning by providing cross curriculum support in mathematics, science, English, and problem-solving experiences.

7. Computer access is supported through multiple labs centralized in one building, performing basic activities coupled with the most advanced complex computer software.

OBSERVATIONS: TECHNOLOGY EDUCATION

QUESTION #1. Does the Logan Technology Model work?

Yes! The program has been successfully operating for four years, required by all 9th grade students, which has expanded to include three levels of technology for continued study in grades 10-11-12.

QUESTION #2. How does the program influence other school curriculum?

Teachers within the school visit the technology center seeking new activities that support improved instructional methods, as well as observing how the technology curriculum integrates with the academic courses in the school.

QUESTION #3. Does the program require new space?

Space from the auto mechanics/electronics lab was changed over to the "Technology Center." The auto mechanics/electronics programs were moved to the area vocational center.

The following recommendations are to be studied when a school, department or a teacher makes the move to upgrade the curriculum, anticipating the implementation of technology education.

1. Review all areas in the vocational/industrial arts curriculum, identifying out-of-date objectives, high costs, non-relevant curriculum units, curriculum compliance guidelines, and the duplication of activities within grade levels of the middle school, high school and area vocational centers and eliminate such programs.

2. Concentrate on selling technology literacy as an essential high school requirement exceeding district, as well as state requirement for graduation.

3. Concentrate on a K-12 technology program which reflects support for improved academic study, as well as an attitude of openness and acceptance for those students who seek to study and work in the technologies which make for "The Good Life."

4. Review the technology curriculum models and design a new course and address:

- a. Program rationale, goals, standards, and course description
- b. Current audio/visual supported learning activities for students
- c. Grade level applications with technology "Hands-on-Activities"
- d. Teachers and counselors who reflect enthusiasm and commitment to implement the "technology class"
- e. Facilities available for short-term training and sharing among teachers.

HOW TO GET STARTED

1. Establish a technology review committee comprised of "the present Voc/IA teaching staff" to study the need for "preparing students for technological competition." "There's a long way to go."

2. Work with representatives from the state office of education, industry, universities, or school districts in requesting assistance with inservice activities in technology cross current programs.

3. Design a program that reflects a new philosophy of technology education identifying opportunities and challenges for students in many new areas of study, don't worry about "TURF", think in terms of "SUPPORT."

4. Correspond/communicate with other districts through workshops designed to propel the technology curriculum towards success for all students.

5. Review, analyze and evaluate the program by answering the following questions:

- a. How best do we set with district, school or state priorities for teaching technology education?
- b. Are our programs still doing a good job in preparing our students for the 1960's, or have we changed?

Technology education cannot wait for gradual changes in the old curriculum. Those teachers who wait will be without a teachable skill, without students, and without a future.

For more information contact:

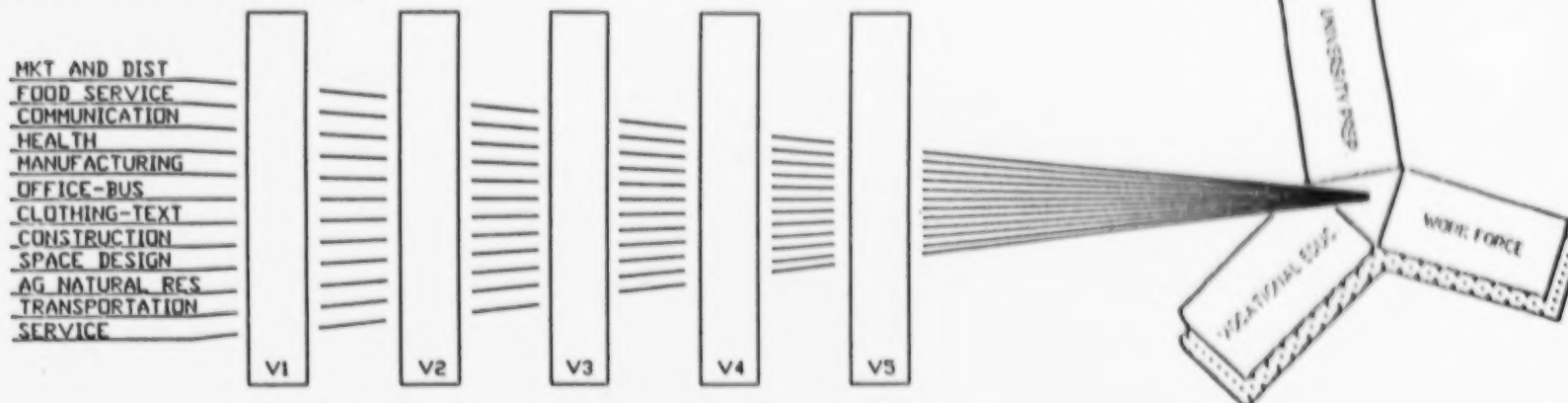
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LOGAN CITY SCHOOLS
TECHNOLOGY EDUCATION: A DESIGN FOR PROGRESS

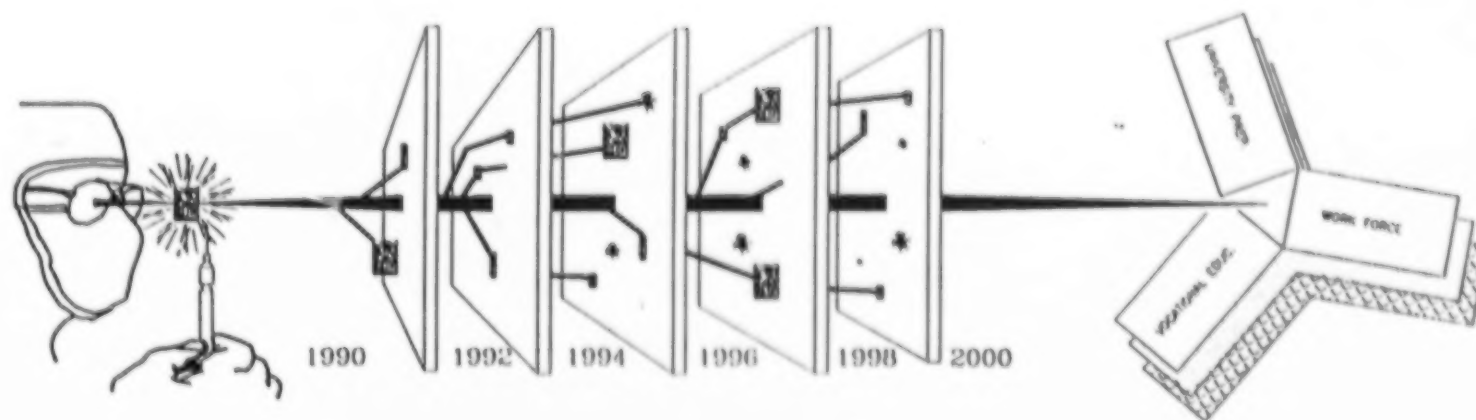
LOGAN
OCCUPATIONAL CLUSTERS



- V.1 CAREER SELECTION AND PREPARATION FOR WORK COMPONENTS;
STUDENTS INTERESTS, APTITUDE AND SPECIAL ABILITIES ARE UNDERSTOOD
- V.2 FREE ENTERPRISE SYSTEM APPLICATIONS COMPONENT;
REAL SUCCESS IF THE RIGHT SELECTIONS ARE MADE
- V.3 TECHNOLOGICAL TRENDS, VOCATIONAL EDUCATION COMPONENT;
BETTER PLANS TODAY CREATING OPPORTUNITIES FOR TOMORROW
- V.4 HUMAN RESOURCES MANAGEMENT FOR LIVING AND WORKING COMPONENT;
DEVELOPMENT AND MANAGEMENT OF RESOURCES FOR HOME, WORK AND
THE GOOD LIFE
- V.5 GUIDANCE AND COUNSELING COMPONENT;
COUNSELORS PROVIDE INDIVIDUAL AS WELL AS GROUP S.E.P. PLANNING

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